In the Drawing:

Please substitute Figures 2, 4(a)-(c), 6, 9, 10, 11 and 12 with new enlarged and/or clear versions of the same attached hereto. Other original drawings are also included.

REMARKS

I. Introduction

Withdrawal of the restriction requirement is acknowledged. The Applicants thank the Examiner for that.

This response is filed in response to the non-Final Office Action dated November 15, 2005 for the above identified patent application. All pending Claims 1-16 have been canceled in lieu of newly added Claims 17-44.

The newly added claims are each supported by the specification, and no new matter has been added by the current amendments. The newly added claims no longer contain any multiple dependent claims.

Replacement figures has been filed to overcome objections to those figures. The replacement figures are merely clear versions of the figures in originally filed. No new matter has been entered in the replacement figures.

II. Objection to the Examiner's statement regarding the priority

The Examiner has noted that the earliest filed provisional application, which contains an enabling disclosure for the claimed invention is 60/323,599, filed 9/20/01. The Applicants respectfully disagree with the Examiner. The earliest priority data claimed is February 9, 2001, which is based on a provisional application, 60/267,970. At least, some of the currently added claims, are fully supported by the disclosure of the earliest provisional application. Thus, Applicants object to the Examiner's statement that "all claims are accorded that filing date [(9/20/01)]."

III. Objections to the Drawings

The Examiner has objected to Figure 2, 4(a)-(c), 6, 9, 10, 11 and 12 as to small or unreadable. New clear versions of the same drawings have been filed.

IV. Rejection under 35 U.S.C.§101

Claims 1-15 are rejected as being non-statutory subject matter. The Examiner stated that the claims are drawn to methods of identifying probabilities of interaction between data representing molecules.

The currently added claims are directed to methods of practical application and/or for producing tangible results. In view of the instant amendments to the claims, this ground of the rejection is believed to be moot.

V. Rejections under 35 U.S.C. §112

The Examiner has rejected to the terms "representing," "computing," and "using" and alleged that these terms are lack of definition as they fail to set forth positive steps or calculation. As amended, all claims now recite positive steps. The terms representing" and "computing" were not used in the new claims. The term "using" is used as a part of a positive step of determination. *See* Claims 25, 28, etc. In view of the instant amendments to the claims, it is believed that this ground of the rejection has been overcome.

The Examiner also alleged that the metes and bounds of the term "posterior probabilities" are unclear. However, the specification clearly describes how the posterior probabilities can be calculated or obtained. See paragraphs [0048] and [0049].

It is believed that all other grounds of the 112 rejections are either moot or overcome by the amendments.

VI. Rejections under 35 U.S.C. §102

The Examiner alleged that Kim et al. (US 2002/0087275) discloses methods of identifying potential interaction between molecules in a database and uses the same edge/vertices theories as those set forth in the specification. Applicants disagree.

Kim et al. discloses a visualization method of existing biologic data using edges and vertices. Thus, visualization is achieved by mere graphical representation of the data in order for integration of disparate molecular biological data and not from prediction of unknown molecular interactions between the edges or vertices.

The Examiner also alleged that Askenazi (US 6,594,587) anticipates the subject matter of Claims 1-3, 5, and 6. As the Examiner correctly pointed out, Askenazi discloses a method that utilizes graph theory to combine graphs relating elements of a biological network, and to produce Steiner Tree subgraphs. However, Steiner Tree graphs do not anticipate or render obvious the present invention. Steiner Tree graphs are methods where the graph theory finds the shortest or most efficient way to represent

targeted data. The method does not involve predicting unknown molecular interactions as regarded by the claimed invention.

The present invention is not a mere visualization method of know data or finding an efficient Steiner Tree graphs thereof. The present invention, for example, allows not only identification of molecular interaction networks based on known data but also prediction or identification of unknown molecular interactions, which could be used to develop new drugs, *e.g.*, agonist or antagonist type drugs.
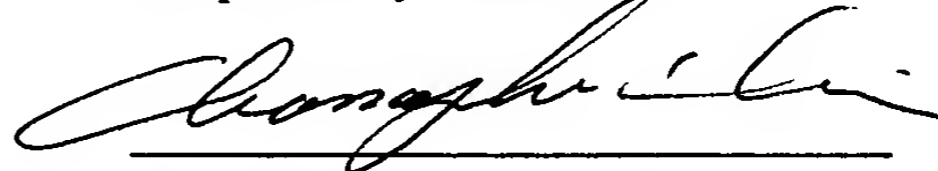
None of the cited references disclose or suggest the presently claimed invention. In view of the amendments to the claims and reasons stated above, thus, it is believed that this ground of the rejection has been overcome.

VII. Conclusion

Kind consideration of the Amendments and the Remarks and allowance of all pending claims are respectfully requested.

A petition of three months extension of time and a check of $690 for the corresponding extension fee ($510) for small entity and IDS submission fee ($180) are included. The Commissioner is hereby authorized to charge any further due or credit any over payment to Deposit Account No. 02-4377.

Respectfully submitted,

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Limited Recognition

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